

19. (New) The method of claim 16, wherein the labeled DNA fragments are selected from the group consisting of probes comprising total recombinant library DNA, probes comprising DNA inserts purified from a chromosome-derived recombinant DNA library, and probes comprising specific DNA fragments derived from chromosomes.

20. (New) The method of claim 16, wherein the labeled DNA fragments are selected from the group consisting of DNA fragments labeled with at least one fluorochrome, DNA fragments labeled with at least one member of a specific binding pair, and DNA fragments labeled with an enzyme.

21. (New) The method of claim 20, wherein the fluorochrome is selected from the group consisting of fluorescein, rhodamine, Texas red, Lucifer yellow, phycobiliproteins and cyanin dyes.